

U.S. Patent Appln. No. 10/552,111
Amendment
Reply to Office Action dated May 9, 2008

Docket No. 304-848

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AMENDMENTS TO THE CLAIMS

This listing will replace all prior versions, and listings, of claims in the application.

1. (Currently amended) A single-lip drill comprising:
with a drill head;
on which is formed a bit[[,]] formed on the drill head; and
the latter being provided with at least one cutting edge provided on the drill bit for the
machining by cutting of a workpiece,
wherein and with the cutting edge is associated at least one chip former for shaping the
chips cut off by the cutting edge, and
wherein the chip former has a positive rake angle (γ).
2. (Currently amended) Single-lip drill according to claim 1, wherein the rake angle (γ) is between 10 and 30° ~~30°, particularly between 15 and 25°~~.
3. (Previously presented) Single-lip drill according to claim 1, wherein the chip former has a chip guide face for guiding the chips and at least one chip break section for breaking the chips.
4. (Previously presented) Single-lip drill according to claim 2, wherein the chip break section is positioned at a distance from the cutting edge suitable for setting a desired chip size.
5. (Currently amended) Single-lip drill according to claim 4, wherein the distance is between 0.2 and 1.5 mm, ~~particularly between 0.3 and 0.6 mm.~~

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6. (Currently amended) Single-lip drill according to claim 1, wherein the chip former is constructed as a slot adjacent to the cutting edge ~~and in particular as a slot with a substantially U-shaped cross section~~.

7. (Currently amended) Single-lip drill according to claim 1, wherein a functional coating, ~~preferably for increasing wear resistance~~, is provided on at least one functional surface of the single-lip drill.

8. (Currently amended) Single-lip drill according to claim 7, wherein at least one of the chip former ~~and/or~~ and at least one clearance is provided with the functional coating.

9. (Previously presented) Single-lip drill according to claim 7, wherein the functional coating is provided on all the functional surfaces participating in the cutting process.

10. (Currently amended) Single-lip drill according to claim 7, wherein the functional coating is at least partly made from hard material, ~~particularly metallic hard material~~.

11. (Currently amended) Single-lip drill according to claim ~~[[10]]~~ 25, wherein a nitride or carbide, ~~particularly a light metal nitride~~ is provided as the metallic hard material.

12. (Currently amended) Single-lip drill according to claim ~~[[11]]~~ 25, wherein titanium aluminium nitride is provided as the ~~light metal nitride~~ metallic hard material.

13. (Previously presented) Single-lip drill according to claim 7, wherein the functional coating has several layers.

14. (Previously presented) Single-lip drill according to claim 13, wherein at least one hard material layer and at least one soft material layer adjacent to the hard material layer is provided, the hard material layer forming an outer layer.

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15. (Currently amended) Method for the manufacture of a single-lip drill, the method comprising the following steps:

manufacturing a drill head with a single-lip drill geometry,
applying a chip former in the vicinity of a bit of the single-lip drill, and
coating at least part of the surface of the drill head with a functional coating after the chip former has been applied.

16. (Currently amended) Method according to claim 15, wherein the functional coating is applied following a sharpening, ~~particularly a regrinding~~ of the drill head.

17. (Previously presented) Method according to claim 15, wherein at least the chip former is coated.

18. (Previously presented) Method according to claim 15, wherein all the surfaces participating in the cutting process are coated.

19. (Previously presented) Method according to claim 15, wherein a chip former with a positive rake angle is formed.

20. (Currently amended) Method according to claim 15, wherein the chip former is constructed as a slot adjacent to the cutting edge of the bit ~~and in particular with a U-shaped cross-section.~~

21. (New) Single-lip drill according to claim 2, wherein the rake angle (γ) is between 15 and 25°.

22. (New) Single lip drill according to claim 5, wherein the distance is between 0.3 and 0.6 mm.

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23. (New) Single-lip drill according to claim 6, wherein the slot has a substantially U-shaped cross-section.

24. (New) Single-lip drill according to claim 7, wherein the functional coating is configured to increase wear resistance.

25. (New) Single-lip drill according to claim 10, wherein the hard material is a metallic hard material.

26. (New) Method according to claim 20, wherein the slot has a U-shaped cross-section.